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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## LEAD IN SEPTEMBER 1997

Mine production, based upon the net quantity of lead recovered in the smelting of concentrate, increased by 2% in September and was up by about 9% compared with production in September 1996. Primary refinery production decreased by 23% in September, owing mainly to the temporary closure of one refinery for routine maintenance (American Metal Market, 1997a). Secondary refinery production increased by about 3% in September and was up by about 6% compared with production in September 1996. Reported consumption increased by 2% in September.

According to *Platt's Metals Week* published quotations, the average North American producer price and London Metal Exchange (LME) cash price increased by 1.0% and 4.3%, respectively, in September. The lead supply tightened in North America and Europe during the month as primary producers cited the need to set sales limits and/or increase premiums amid increasing demand from lead-acid battery manufacturers (American Metal Market, 1997c,d).

National Defense Stockpile cash disposal (sale) of lead in September 1997 was 13,902 metric tons (15,324 short tons). The sale in September included approximately 10,000 metric tons (11,000 short tons) offered for release by the Defense National Stockpile Center in negotiated long-term contracts. Sale of lead in fiscal year 1997 (October 1996 through September 1997) was 31,122 metric tons (34,306 short tons).

The Queensland, Australia, State parliament recently passed the Century Zinc Project Bill, providing final clearance for completion of the sale of the project by Australia's Rio Tinto to Pasminco Ltd., and for construction to begin at the Century Mine in north Queensland during the last quarter of 1997. According to a Queensland Government official, the bill delivered on an agreement signed between the Government, the Century Project owners, and the Native Title claimants in May of this year. The Century Mine is expected to yield 780,000 metric tons of zinc-silver concentrate and 70,000 metric tons of lead concentrate per year (Platt's Metals Week, 1997).

India's state-owned Hindustan Zinc Ltd., (HZL) intends to increase the supply of lead concentrate to its primary refinery through joint venture agreements. According to a Government official, this action will be necessary in order to meet the anticipated increase in demand for lead over the next 5 years. HZL has the capacity to produce 65,000 tons of lead annually but will require an additional supply of concentrate to raise its production rate to this capacity. In a further move to meet the expected increase in demand, Indian Lead Ltd., the country's principal producer of secondary lead, intends to increase the production capacity of its smelter from the current 24,000 tons per year to the level of 40,000 tons per year. Indian consumption of lead during the most recent fiscal year was about 79,000 tons. By 2002, the projected consumption of lead will be about 120,000 tons per year (American Metal Market, 1997b).

Breakwater Resources, Toronto, Canada, has acquired all of the assets of Société Minière de Bougrine, including the Bougrine zinc-lead mine in Tunisia, and the associated concentrator and infrastructure. Société Minière de Bougrine began production at the mine in June 1994, but operations were suspended in October 1996 as a result of financial constraints. Breakwater expects to produce 42,000 tons per year of zinc and 7,000 tons per year of lead in concentrate when it begins production early in 1998. Reserves at Bougrine reportedly total 4 million tons at a grade of 10.8% zinc and 2.4% lead (Metal Bulletin, 1997b).

BHP Minerals, Melbourne, Australia, recently reported that it expects to begin shipments of concentrate in January 1998 from the new Cannington lead-zinc-silver mine in Queensland. At full production, BHP intends to treat 1.5 million tons of ore annually to produce 150,000 tons of lead and 60,000 tons of zinc in concentrate per year. Reserves at Cannington reportedly total 47 million tons at a grade of 10.7% lead, 4.6% zinc, and 470 grams of silver per ton (Metal Bulletin, 1997a).

## References Cited

- American Metal Market, 1997a, Doe Run to idle lead smelter: American Metal Market, v. 105, no. 169, September 1, p. 1.
- 1997b, India seeks more lead: American Metal Market, v. 105, no. 171, September 4, p. 5.
- 1997c, Strong demand stirs symptoms: American Metal Market, v. 105, no. 171, September 4, p. 1.
- 1997d, Suppliers scrambling in tight market: American Metal Market, v. 105, no. 178, September 15, p. 1.
- Metal Bulletin, 1997a, BHP's Cannington to ship first concentrates next January: Metal Bulletin, no. 8213, September 22, p. 1.
- 1997b, Breakwater Resources completes mine acquisition: Metal Bulletin, no. 8211, September 15, p. 9.
- Platt's Metals Week, 1997, Century zinc gets green light from Queensland parliament: Platt's Metals Week, v. 68, no. 35, September 1, p. 2.

TABLE 1  
SALIENT LEAD STATISTICS IN THE UNITED STATES 1/

(Metric tons)

	1996		1997		
	Year total	Jan. - Sept.	Aug.	Sept.	Jan. - Sept.
Production:					
Mine (recoverable)	426,000	317,000 r/	33,700	34,400	316,000
Primary refinery 2/	326,000	249,000	28,000	21,600	254,000
Secondary refinery:					
Reported by smelters/refineries	1,080,000	725,000	91,900	94,400	784,000
Estimated	--	11,200	1,590	1,670	13,000
Recovered from copper-base scrap e/	16,400	11,300	1,250	1,250	11,300
Total secondary	1,100,000	747,000	94,700	97,300	808,000
Stocks, end of period:					
Primary refineries 2/	XX	XX	7,790	5,370	XX
Secondary smelters and consumers	XX	XX	59,300 r/	73,700	XX
Imports for consumption:					
Ore and concentrates (lead content)	6,570	3,350	598	NA	8,380 3/
Refined metal	268,000	189,000	22,900	NA	169,000 3/
Consumption:					
Reported	1,530,000	897,000	103,000	105,000	935,000
Undistributed e/	--	332,000	16,700	17,000	152,000
Total	1,530,000	1,230,000	119,000	122,000	1,090,000
Exports (lead content):					
Ore and concentrates	59,700	43,800	14,500	NA	33,400 3/
Materials excluding scrap	102,000	81,900	4,440	NA	62,100 3/
Ash and residues	19,400	12,300	553	NA	12,700 3/
TEL/TML preparations, based on lead compounds	3,200	2,780	241	NA	1,740 3/
Exports (gross weight): Scrap	85,300 4/	64,900 4/	7,070	NA	54,900 3/
Platt's Metals Week North American producer price (cents per pound)	48.83	48.85	45.84	46.31	46.81

e/ Estimated. r/ Revised. NA Not available. XX Not applicable.

1/ Data are rounded to three significant digits, except prices; may not add to totals shown.

2/ Data from American Bureau of Metal Statistics, Inc. (ABMS).

3/ Includes data for January - August only; September data not available at time of publication.

4/ Includes only non-battery scrap data.

TABLE 2  
MONTHLY AVERAGE LEAD PRICES

	North American producer price cents/lb	LME		Sterling exchange rate dollars/£
		\$/metric ton	£/metric ton	
1996:				
September	49.57	795.96	510.47	1.559290
Average Jan. - Sept.	48.85	793.38	516.50	1.536315
Year average	48.83	773.87	495.56	1.561616
1997:				
June	45.90	614.49	373.61	1.644743
July	46.09	633.91	379.73	1.669382
August	45.84	607.74	379.00	1.603524
September	46.31	633.81	395.81	1.601276
Average Jan. - Sept.	46.81	643.99	395.03	1.630458

Source: Platt's Metals Week.

TABLE 3  
MINE PRODUCTION OF RECOVERABLE LEAD IN THE UNITED STATES 1/

(Metric tons)

	1996		1997		
	Year total	Jan. - Sept. r/	Aug.	Sept.	Jan. - Sept.
Missouri 2/	397,000	293,000	32,900	33,200	304,000
Montana	7,970	6,020	279	814	W
Other States 3/	21,200	18,200	447	391	11,400
Total	426,000	317,000	33,700	34,400	316,000
Daily average 4/	1,160	1,160	1,090	1,150	1,160

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other States."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Alaska and Missouri combined to avoid disclosing company proprietary data.

3/ Includes Colorado, Idaho, Illinois, New York and Tennessee.

4/ Based on number of days in period without adjustment for Sundays or holidays.

TABLE 4  
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP IN SEPTEMBER 1997 1/

(Metric tons, gross weight)

Item	Stocks Aug. 31, 1997	Net receipts	Consumption	Stocks Sept. 30, 1997
Battery-lead	30,500	92,900	94,400	29,000
Soft lead	W	W	W	W
Drosses and residues	2,290 r/	3,120	3,230	2,170
Other 2/	2,470 r/	3,540	3,200	2,810
Total	35,200	99,600	101,000	34,000
Percent change from preceding month	--	+8.2	+10.1	-3.5

r/ Revised. W Withheld to avoid disclosing company proprietary data; included with "Other."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes solder, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap not elsewhere classified.

TABLE 5  
LEAD, TIN, AND ANTIMONY RECOVERED FROM LEAD-BASE  
SCRAP IN SEPTEMBER 1997 1/

(Metric tons)

Product recovered	Secondary metal content		
	Lead	Tin	Antimony
Soft and calcium lead	52,900	--	--
Remelt lead	W	W	W
Antimonial lead	36,700	13	W
Other 2/	W	W	--
Total lead-base	94,400	34	371

W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Data are rounded to three significant digits.

2/ Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 6  
CONSUMPTION OF LEAD IN THE UNITED STATES 1/

(Metric tons, lead content)

Uses	1996		1997		
	Jan.-Dec. 2/	Jan.- Sept.	Aug.	Sept.	Jan.- Sept.
<b>Metal products:</b>					
Ammunition-shot and bullets	52,100	31,500	4,840	5,830	40,800
Brass and bronze-billet and ingots	5,460	4,580	508	529	4,680
Cable covering-power and communication and calking lead-building construction	W	4,800	427 r/	426	4,040
Casting metals	18,800	1,080	453	488	3,990
Pipes, traps, and other extruded products	(3/)	(3/)	(3/)	(3/)	(3/)
Sheet lead	21,200	7,260	1,250	1,230	12,500
Solder	9,020	4,340	393 r/	509	5,180
Storage batteries, including oxides	1,340,000	829,000	94,200	92,400	855,000
Terne metal, type metal, and other metal products 4/	9,560	3,300	242	172	1,780
Total metal products	1,460,000	886,000	102,000	104,000	931,000
Other oxides	(5/)	(5/)	(5/)	(5/)	(5/)
Miscellaneous uses	70,900	11,000	425	408	4,400
Total reported	1,530,000	897,000	103,000	105,000	935,000
Undistributed consumption e/	--	332,000	16,700	17,000	152,000
Grand total	1,530,000	1,230,000	119,000	122,000	1,090,000

e/ Estimated. r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total metal products."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes annual data.

3/ Withheld to avoid disclosing company proprietary data; included with "Sheet lead."

4/ Includes lead consumed in bearing metals, foil, collapsible tubes, annealing, plating, galvanizing, and fishing weights.

5/ Withheld to avoid disclosing company proprietary data; included with "Miscellaneous uses."

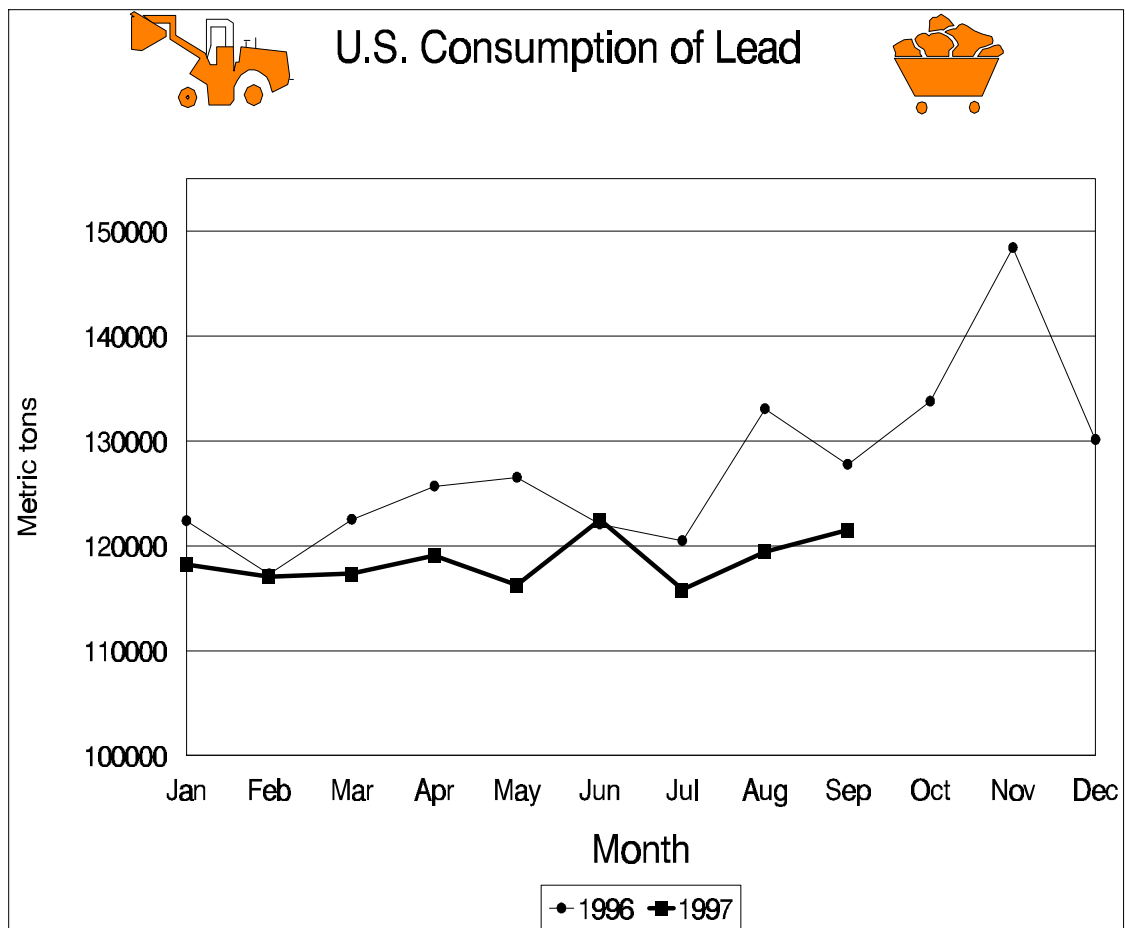


TABLE 7  
CONSUMER AND SECONDARY SMELTER STOCKS, RECEIPTS, AND  
CONSUMPTION OF LEAD IN SEPTEMBER 1997 1/

(Metric tons, lead content)

Type of material	Stocks Aug. 31, 1997	Net receipts	Consumption	Stocks Sept. 30, 1997
Soft lead	25,000 r/	69,400	55,000	39,500
Antimonial lead	28,400	32,300	32,400	28,300
Lead alloys	W	17,000	16,900	W
Copper-base scrap	W	426	426	W
Total	59,300 r/	119,000	105,000	73,700

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 8  
U.S. EXPORTS OF LEAD, BY CLASS 1/

(Metric tons)

	1996		1997		
	Year total	Aug.	July	Aug.	Jan. - Aug.
Lead content:					
Ore and concentrates	59,700	22,200	11,700	14,500	33,400
Materials excluding scrap	102,000	15,000	4,230	4,440	62,100
Ash and residues	19,400	1,060	1,970	553	12,700
TEL/TML preparations, based on lead compounds	3,200	1,450	208	241	1,740
Total	184,000	39,700	18,100	19,700	110,000
Gross weight: Scrap	85,300 2/	8,530 2/	7,740	7,070	54,900

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes only non-battery scrap data.

Source: Bureau of the Census.

TABLE 9  
U.S. IMPORTS OF LEAD BY TYPE OF MATERIALS AND BY COUNTRY OF ORIGIN 1/

(Metric tons, lead content)

Country of origin	General imports					Imports for consumption				
	1996		1997			1996		1997		
	Year total	Jan. - Aug.	July	Aug.	Jan. - Aug.	Year total	Jan. - Aug.	July	Aug.	Jan. - Aug.
Ore, matte, etc.:										
Bolivia	326	282	168	--	613	--	--	--	--	--
Canada	352,000	244,000	6	766	59,700	4,370	2,370	--	--	753
Mexico	2,890	1,680	--	--	558	2,080	859	--	--	558
Peru	13,400	11,500	2,370	2,030	6,830	--	--	1,810	598	2,410
Other	133	133	16	--	5,120	122	122	--	--	4,660
Total	369,000	258,000	2,560	2,800	72,800	6,570	3,350	1,810	598	8,380
Base bullion:										
Mexico	5	--	--	--	5	5	--	--	--	5
Total	5	--	--	--	5	5	--	--	--	5
Pigs and bars:										
Belgium	11	--	--	--	47	11	--	--	--	47
Canada	192,000	115,000	16,300	15,500	123,000	192,000	115,000	16,300	15,600	123,000
Germany	338	133	77	42	359	338	133	77	42	359
Mexico	56,900	34,500	6,720	6,770	40,000	56,900	34,500	6,720	6,770	40,000
Peru	17,100	14,200	500	500	4,200	17,100	14,200	500	500	4,200
United Arab Emirates	160	109	--	--	42	160	109	--	--	42
United Kingdom	19	--	--	--	--	19	--	--	--	--
Other	846	304	11	10	951	846	304	11	10	951
Total	267,000	164,000	23,700	22,800	169,000	268,000	164,000	23,700	22,900	169,000
Reclaimed scrap, including ash and residues	192	171	--	14	62	192	171	(2/)	14	62
Grand total	636,000	422,000	26,200	25,600	241,000	274,000	168,000	25,500	23,500	177,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Revised to zero.

Source: Bureau of the Census.